

that of the kiwi. With regard to the question whether the Maoris ever saw the moa, it is stated on p. 81 that "it appears that the Maoris have only been in their present location for about ten generations, or some 250 or 300 years, and the moa could hardly have lived within that period, and it is held as probable that their extinction was several centuries earlier than this."

Definite evidence of the contemporaneity of the Maori and the moa was adduced some eighteen years ago, during the exploration of the Sumner Cave, near Christchurch. The mouth of this rock-shelter had been closed by a landslide before the arrival of the Europeans in the South Island, the result, probably, of an earthquake, while a meal was in progress. The occupants succeeded in escaping, but round the fireplace about which they had been sitting were found moa bones and portions of the eggs, with the shell-membrane intact, on which they had been feasting. On the floor near by lay a boat-bailer and other objects with the carving truly characteristic of the Maori upon them.

Of the three specimens of the now extinct *Dromaeus ater* discovered, and brought to Europe by the French expedition under Baudin, all have now been located, as stated in the work before us—two in Paris (a skeleton and mounted specimen), and one (a skeleton) in Florence. A fourth specimen, it might have been mentioned, is now in the Lord Derby Museum, Liverpool, and was exhibited at the International Ornithological Congress in London by the Hon. Walter Rothschild on behalf of the director of that institution. As to the black swan of Australia, it seems extremely probable that it was indigenous to New Zealand as well as to the island-continent. The bones of a species, described under the name of *Chenopsis sumnerensis*, hardly differing from those of *Chenopsis atrata*, were found among the debris of the disturbed meal referred to above in the Sumner Cave, as well as in an ancient kitchen-midden in the Chatham islands.

A very full index completes this very excellent, succinct, and trustworthy account of the "Birds of the World," and we hope it will, despite its bulkiness and weight, meet in the United States, and in England also, with the appreciation it fully deserves.

(2) The second volume in the list given above is of a very different character, and the reason for its publication in this country is not very apparent.

The book is a translation of portions of the valuable work prepared by the director of the Royal Hungarian Ornithological Bureau to enable landowners, farmers, fruit-growers, and gardeners in that country to discriminate their avian friends and foes, together with a somewhat well-worn account, padded with poetical quotations, by Mr. J. A. Owen, of a selection of our most common English birds, including always the statement whether the species is harmful or useful in England, which seems to be apparently the only excuse for Herr Herman's book (in part) appearing in an English garb. The English co-author believes that amongst the innumerable books on bird-life which have been published of late years "there has been a lack which this little volume may supply."

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From a careful reading of the work we can really discover very little not to be found in nearly every book on British birds. It includes also a few species, common in Hungary, which rarely visit England, or are only winter visitors which can trouble the English agriculturist but little. It lacks, moreover, the details "arranged on a regular scientific basis" and "the investigations with regard to the food of birds carried on by a fully qualified entomologist" upon which Herr Herman has proved the various species of Hungary to be useful or harmful, and which would have impressed the corresponding classes of readers in England as those for whom the volume was prepared in Hungary. A more thorough work on the economic value of birds in the English language is to be found in the Bulletins of the U.S. Department of Agriculture, which contain the life-history and the detailed results of the examination of hundreds of individuals of each species, including nearly as many English ones as are given in the volume under review. "Birds Useful and Harmful" may, nevertheless, assist in spreading the knowledge of those birds, persistently persecuted, that deserve protection. F.

A GROUP OF "FLORAS."

- (1) *A Tourist's Flora of the West of Ireland*. By R. L. Praeger. Pp. xii+243; with 5 coloured maps, 27 plates, and 17 figures. (Dublin: Hodges, Figgis and Co., Ltd., 1909.) Price 3s. 6d. net.
- (2) *Illustrated Guide to the Trees and Flowers of England and Wales*. By H. G. Jameson. Pp. xi+136. (London: Simpkin, Marshall and Co., Ltd., 1909.) Price 2s. 6d. net.
- (3) *Flora Koreana. Pars Prima*. By T. Makai. (Journal of the College of Science, Imperial University of Tokyo, Japan, vol. xxvi., article i., 1909.)
- (4) *The Botany of Worcestershire. An Account of the Flowering Plants, Ferns, Mosses, Hepatics, Lichens, Fungi, and Fresh-water Algae, which grow or have grown spontaneously in the County of Worcester*. By J. Amphlett and Carleton Rea. Pp. xxxiii+654. (Birmingham: Cornish Bros., Ltd., 1909.) Price 25s. net.

(1) MR. R. L. PRAEGER'S book is a solid contribution to the subject of phytogeography, and is increased in value by the many beautiful, mostly full-page, photographs of striking species of plants, some of which appear for the first time, as here illustrated. Coloured and uncoloured maps of the districts described or of the distribution of species add to the usefulness of the book, which is well indexed and singularly free from typographical errors. The introduction contains a short account of the physical features of the west of Ireland, of its, mainly edaphic, plant formations, and of the more remarkable features of its flora. The topographical section which follows contains valuable information on the character of the flora of the numerous regions selected for description. This section will appeal to the touring botanist, more especially as the information given is not purely botanical. The author might have expanded this section, with advan-

tage to the inquiring tourist to whom the west is unknown.

The systematic section forms half the book, and follows mainly the classification and nomenclature of the London catalogue. *Pilularia globulifera* is wrongly placed in the Selaginellaceæ. The distribution of each species is recorded, and in many cases it is due to the work of the author that the distribution is now known to be so extensive. First records are duly credited to the discoverers, and many interesting observations are embodied in the text. The Saxifrages and the heaths, e.g., are adequately treated. The book can be well recommended for the sake of its illustrations, and would be worth purchase if it had none. It does justice to the delightful botanical and other attractive features of the west, and is a credit to author and publisher.

(2) The avowed object of the writer of this book is to enable readers, knowing little of botany, by its use to give names to the plants they find, the name being, the writer insists, the first essential. This idea is not at all in keeping with recent views on nature-study. Still, every student of botany should learn to name a plant by the help of a "flora." Teachers know how students, even with the keys in our best floras, fail from time to time to name a plant. In the book under review all flowering plants are divided into ten sections. One section—flowers in heads or umbels—includes the Papilionaceæ. In another section—flower parts in threes or sixes—*Rumex* occurs between *Triglochin* and *Luzula*. The section devoted to aquatic plants will prove useful. Monocotyledons and Dicotyledons are not differentiated. *Ruscus* is said to have "phyllodes" as leaves. This is one of the few cases in which botanical terms are introduced.

The second part of the book is devoted to a selected number of natural orders, and more especially to the means of identification of the species of different genera, arranged alphabetically. This is the most useful part of the book. The illustrations, though small, are generally good. Misprints are few. There is, however, no index. The book is cheap, and will prove serviceable to the reader who already knows his natural orders fairly well.

(3) Mr. Makai's work is indicative of the line followed by Japan on the absorption of a new province into its empire. Korea was quite recently annexed, and so early as 1906 Makai began his study of its flora. The systematist of Japan is to-day doing as the British systematists did at the time England first acquired and explored her colonies.

This first part of the "Flora Koreana" deals with the Polypetalæ and certain Gamopetalæ, and is well illustrated by fifteen plates (one or two of which are rather crowded) of plants mostly new to science. Though printer's errors are numerous and generally indicated in a list of *errata*, the volume is produced in a form in keeping with the high standard of the other publications of the College of Science of Tokyo. The keys to the genera, and, under each genus, to its species, are useful. Under each species its bibliography, habitat, distribution, and Japanese name are

given. New species and varieties are described in Latin, and usually illustrated. The index is inadequate. It is necessary to search the body of the work for the novelties, and there is no general index to the contents of the plates. It is impossible to discuss the contents of the volume in detail. One illustration must suffice for comparison with our flora. The beautiful genus *Acer* is represented by fifteen species or varieties. *Trifolium* by one species only.

(4) This work deals in a comprehensive manner with the flowering and flowerless plants of the county of Worcester. In an introduction of twenty pages justice is done to earlier publications, Lees and Mathews being specially noted. The authors follow the London Catalogue in the names of the species, adding useful synonyms. First records are duly credited, and valuable specific distinctions are occasionally added. Some of the notes, now and then amusing, are often loosely worded, and might sometimes have been omitted with advantage. The mosses and liverworts are listed by J. E. Bagnall, and the fungi by C. Rea, both authorities on their groups. It is a little disconcerting to find *Protonema muscicola*, Ag., recorded as a fresh-water alga (crowding about the bases of moss-stems)! Throughout the book derivatives of the Latin names are given. A map showing the botanical areas of the county is an excellent feature. The book is a distinct advance on previous publications on Worcestershire botany, and should stimulate interest in field botany in the county. The price is high for a county flora, but local patriotism will probably rise to the occasion.

T. J.

GEOLOGY OF NEW YORK CITY.

Geology of the City of New York. By L. P. Gratacap. Pp. x+232; with 65 figures and 4 maps. Third edition, enlarged. (New York: Henry Holt and Co., 1909.)

THIS general treatise on the underlying structure of the city of New York and its immediate surroundings appears to be the amplification of a shorter work on the same subject, printed privately for the author. Its outlook is local, and, as the interpolated "Class Directions" indicate, it is intended primarily for use in the instruction of the inhabitants of the great city. It is compiled from various sources, which are duly acknowledged, and contains, besides, some original observations, but these are not sufficiently important or numerous to appeal to the wider circle of geologists who have no particular interest in the locality. In many passages it emphasises the transformation wrought by man on the original aspect of the country, in deference, no doubt, to the naïve astonishment with which the average town-dweller receives such information.

New York is one of the few great cities founded upon crystalline schists. Some of the problems of the schists and their entangled igneous intrusions are touched upon by the author, but his grasp is hardly adequate for their unravelling. As in almost every similar region, diverse views are held respecting the age of the different members of the schistose series.